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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,225	08/24/2000	Peter W. Brown	32575	3218

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EXAMINER
ROY, SIKHA

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/645,225	BROWN ET AL.	
	Examiner	Art Unit	
	Sikha Roy	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 24, 2003 has been entered.

Due to newly found prior art the Examiner respectfully submits the withdrawal of the previously allowed claims 12-16,18 and 19.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,7-11,12,13,15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,569,970 to Dynys et al.

Regarding claims 1 and 2 Dynys et al. disclose (column 1 lines 27-32, column 2 lines 23-27) an optical interference coating (filter) comprising alternate layers of tantala (tantalum pentoxide Ta_2O_5) and silica (SiO_2) wherein silica is the low refractive index material and tantala is the high refractive index material. Dynys et al. further disclose

(column 5 lines 55-65) that the total number of combined layers of silica and tantala preferably ranges from 8 to 100.

Referring to claims 7-11 Dynys et al. disclose the total number of layers in the optical interference coating ranges from 8 to 100.

Regarding claims 12 and 13 Dynys et al. disclose (column 2 lines 40-44, Fig. 1)an electric lamp 10 comprising a light transmissive envelope enclosing an electric light source and a portion of the envelope being coated with an optical interference coating (filter) comprising alternate layers of tantala (tantalum pentoxide Ta_2O_5) and silica (SiO_2) wherein silica is the low refractive index material and tantala is the high refractive index material. Dynys et al. further disclose (column 5 lines 55-65) that the total number of combined layers of silica and tantala preferably ranges from 8 to 100.

Regarding claims 15 and 16 Dynys et al. disclose an electric lamp having interference coating with alternate layers of tantala and silica where the total number of combined layers of silica and tantala preferably ranges from 8 to 100.

Claims 21,22 and 27,28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,138,219 to Krisl et al.

Referring to claims 21 and 22, Krisl et al. disclose (column 1 lines 52-60) interference coating of alternating layers of tantalum pentoxide with high refractive index and silica with low refractive index.

Krisl et al. disclose values of thickness of the layers of high and low refractive index materials in Table 1 from which the ratio of the total thickness of all the layers of high index of refraction material to the total thickness of all the layers of low index of

refraction material can be calculated. It is noted that the desired transmission and reflection are accomplished by selecting layer thicknesses. As there is no recitation of any particular design of the coating it would have been obvious to one of ordinary skill in the art at the time of invention to modify the values of a', b', c' or a, b, c and thus change the thickness of a layer in the coating of Krisl et al. because changes in design are considered to be within the skill of the art and find the desired ratio of the thicknesses . With a' = 4 the ratio of the thicknesses of high and low refractive index layers in the third stack of the optical interference coating is 0.94. Krisl et al. further disclose (column 7 lines 51-56) that the design and the thickness of the layers can be refined by computer optimization and hence different values of ratio can be obtained.

Claims 27 and 28 essentially recite the same limitations as of claims 21 and 22 for an electric lamp and are disclosed by Krisl et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-6,14, 17-20,23-26,29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,569,970 to Dynys et al. in view of U. S. Patent 5,138,219 to Krisl et al.

Claim 3 differs from Dynys et al. in that Dynys et al. do not exemplify the ratio of the total thickness of the layers of high and low refractive indices.

Krisl et al. in analogous art of lamps using optical interference coating disclose values of thickness of the layers of high and low refractive index materials in Table 1 from which the ratio of the total thickness of all the layers of high index of refraction material to the total thickness of all the layers of low index of refraction material can be calculated. It is noted that the desired reflection is accomplished by selecting layer thickness. As there is no recitation of any particular design of the coating it would have been obvious to one of ordinary skill in the art at the time of invention to modify the values of a', b', c' or a, b, c and thus change the thickness of a layer in the coating of Krisl et al. because changes in design are considered to be within the skill of the art and find the desired ratio of the thickness. With a' = 4 the ratio of the thickness of high and low refractive index layers in the third stack of the optical interference coating is 0.94. Krisl et al. further disclose (column 7 lines 51-56) that the design and the thickness of the layers can be refined by computer optimization and hence different values of ratio can be obtained. Krisl et al. disclose (column 3 lines 1-10) the selected thickness of the materials of high and low refractive indices results in a coating which has a spectrally broad high transmittance of radiation in the visible spectrum and spectrally broad high reflectance of infrared radiation, thus increasing the efficiency and efficacy of the lamp.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the thickness of the layers of high and low refractive indices in the interference coating of Dynys et al. by the ratio of total thickness of high and low

refractive index material as suggested by Krisl et al. for yielding a spectrally broad high transmittance of radiation in the visible spectrum and spectrally broad high reflectance of infrared radiation, thus increasing the efficiency and efficacy of the lamp.

Claims 4,5,6 essentially recite the same limitation as of claim 3 with different values of ratio of the total thickness of all the layers of high index of refraction material to the total thickness of all the layers of low index of refraction material, which can be determined by changing the design of the coating from Krisl et al. and hence are rejected.

Claims 17 and 18 essentially recite the same limitations as of claim 3 with total number of layers being 78 and 55 respectively which are disclosed by Dynys et al.

Claims 19 and 20 essentially recite the same limitations as of claim 3 for an electric lamp having interference coating with total number of layers being 78 and 55 respectively which are disclosed by Dynys et al.

Claims 23, 24 essentially recite the same limitations as of claims 4 and 5 respectively and hence are rejected for the same reason (see rejection of claims 4,5).

Claims 29 and 30 essentially recite the same limitations as of claims 4 and 5 respectively for an electric lamp and hence are rejected for the same reason (see rejection of claims 4,5).

Claims 25 and 26 essentially recite the same limitations as of claims 1 and 7 respectively and hence are rejected for the same reason (see rejection of claims 1,7). The reason for combining the teachings of Krisl et al. and Dynys et al. holds.

Claims 31 and 32 essentially recite the same limitations as of claims 1 and 7 respectively for an electric lamp and hence are rejected for the same reason (see rejection of claims 1,7).

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879

VIP PATEL
PRIMARY EXAMINER